

## Air Quality Information Related to Wild fires And Visibility Guide to Assessing Particulate Matter

During the fire season, DEQ issues daily forest fire air quality updates around the state. This information is found at [www.deq.state.mt.us/FireUpdates/](http://www.deq.state.mt.us/FireUpdates/).

**During “very unhealthy” air quality periods**, the Health Department recommends that persons most at risk for respiratory complications due to air quality concerns avoid outdoor activities. Individuals at risk include children, the elderly, and persons with known respiratory problems. Everyone else should avoid prolonged exertion. **In all cases, residents are advised to error on the side of caution when going about their daily routines.**

Listed below are visibility ranges to determine forest fire smoke categories as published by Montana Department of Environmental Quality (DEQ). Also listed are the definitions and possible health effects of these smoke categories. Additional information may be obtained by visiting DEQ’s website:  
<http://www.deq.state.mt.us/FireUpdates/>

Visibility Ranges Used to Determine  
Forest Fire Smoke Categories

Visibility Range	Category
13.4 miles and up	Good
8.8 to 13.3 miles	Moderate
5.1 to 8.7 miles	Unhealthy For Sensitive Groups
2.2 to 5.0 miles	Unhealthy
1.3 to 2.1 miles	Very Unhealthy
1.3 miles or less	Hazardous

The procedure for making personal observation to determine the forest fire smoke index value for local areas without National Weather Station (NWS) or Department of Environmental Quality (DEQ) monitors is:

1. Face away from the sun.
2. Determine the limit of your visible range by looking for targets at known distances (miles).
3. Visible range is that point at which even high contrast objects totally disappear.
4. Use the values above to determine the local forest fire smoke category.

The following are local examples of estimated visibility ranges:

**Bozeman—From the Courthouse on Main Street:**

- ~3 miles to the beacon on Story Hill
- ~4 miles to the “M” on the Bridger Range
- ~5 miles to the top of the Bridger Range

**Belgrade—From the stop sign at Main & the Frontage Road:**

- ~1 mile to the Airport Tower
- ~1.7 miles to the radio tower east of the airport
- ~5 miles to the base of the Horseshoe Hills north of Town

**Three Forks**

- ~5 miles to the top of the ridge west of town
- ~5 miles to the base of the foothill to the Northeast toward Cottonwood Gulch

**Manhattan**

- ~2.5 miles to the base of the hills to the north

**West Yellowstone**

- ~3 miles to the Yellowstone National Park lookout tower to the southeast

**Sedan**

- ~5 miles to the base of the foothills in the west

**Maudlow**

- ~3 miles to the top of the nearest Horseshoe Hills in the southwest

# Forest Fire Smoke Categories

## Air Quality Index (AQI) for PM-2.5 24-Hour <sup>1</sup>

Categories	Health Effects	Cautionary Statements
Good	None	None
Moderate	Possibility of aggravation of heart or lung disease among persons with cardiopulmonary disease and the elderly.	None
Unhealthy for Sensitive Groups	Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.	People with respiratory or heart disease, the elderly and children should limit prolonged exertion.
Unhealthy	Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in the general population.	People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion.
Very Unhealthy	Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant risk of respiratory effects in the general population.	People with respiratory or heart disease, the elderly, and children should avoid any outdoor activity; everyone else should avoid prolonged exertion.
Hazardous	Serious aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; serious risk of respiratory effects in the general population.	Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly, and children should remain indoors.

<sup>1</sup> Guideline For Reporting Of Daily Air Quality – Air Quality Index (AQI), EPA-454/R-99-010, July 1999, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, 27711.